Utilizing social networks in financial decision making processes

Mohammad Hosseini

31/May/2013

Abstract

Involving more stakeholders via a social media and analyze their views with an Artificial Intelligent Agent assists financial managers of large corporations or banks and other financial institutions in their decision making. The advantage of this proposal over current business models is the potential in obliging stockholders to envisage others' interests, and involving stakeholders in corporate decisions which directly impacts their lives.

Key words: Ethics, Corporations, Financial decision making, Social media, Artificial Intelligent Agent

Introduction

Nowadays individuals have a passive role in the complex process of corporate decision making but still gain from their global activities. Only after realizing that owners and shareholders have benefitted more or destroyed the environment, they start their activities. This paper aims at introducing a democratic resolution to bring that late reaction forward and turn it into proactive behavior.

The way which financial institutions are functioning today has created a system which forces financial managers to deal with constant uncertainty and doubt (Gilchrist, 2010). That provides the opportunity for public to accuse them for making immature or unethical decisions. However, ethical decision making is a complex, multi-stage process. The notion that being ethical is simple ignores the pressures of the organizational context that influence the relationship between moral judgment and action (Trevin˜o and Brown, 2004).

This paper suggest that by involving more stakeholders into decision making processes of large multinational corporations; ethical dilemmas become easier to address. An advanced system that enables corporations to combine the great calculation and estimation capabilities with stakeholders' views, could bring transparency and accountability to a whole new level. This paper aims at identifying reasons for the creation of such system and ideas for developing it.

Unethical corporations VS mysterious crowd

After the collapse of financial markets in 2008, main stream media tried to focus on managers for their controversial decisions and imputed the large financial corporations such as Goldman Sachs for their irresponsible behavior. Nevertheless, markets don't exist in the vacuum, politics and public opinion shape the markets and in doing so, they influence the outcomes as well. Only criticizing the financial sector and under estimating the impact of social-cultural values is not helpful in solving ethical issues. To be frank, we are all benefitting from the outcomes of the unethical and cruel globalization. Obviously some are benefitting more, but that does not mean that we should victimize ourselves.

What strikes at the first glance is a lacking notion of redefining and questioning the issues. None of the analysts or journalists ever asked if the tedious process of looking through corporate decisions to discover an unethical decision is the right perception of the problem. Public opinion should have been confronted with a much more fundamental question. Playing a legal moralistic game to identify the guilty person or penalizing a few companies will not solve the problem permanently. Solution begs for a more general question: indeed, those who were involved in unethical business activities or fraud are guilty. But are we aware that this behavior could have

been committed by any other person or firm as well? If any of us was a member at the board of directors of a large corporation and would find out that the only way to save the jobs and the company is to do certain actions, any decision appears to be justifiable.

Finance today

Abundance of information and technological advancements, are already proclaiming the declining role of individual decision makers in corporate finance. 'The structure of the accounting and finance function is changing. Increasingly both transaction processing and analysis are being handled in a shared service model."[1] That might solve challenges like human resources, knowledge sharing or analyzing large data sets, but on the other hand, fraudulent activities such as money laundry or tax evasion could be conducted more easily.

Nevertheless, financial decisions are still about helping to improve the competitiveness of the business.[2] That means the core has not changed, only more experts and experienced parties are being involved in the decision makings. Since intermediary advisors and consultants measure the risks and include more factors in their calculations, from corporate point of view the probability of a technical failure is near zero.

What is lacking in the mentioned process is an effective involvement of stakeholders' views that are affected by corporate activities. The benefit of owners is largely dependent upon the relationship between the parties comprising the firm (Chamberlin and Cohn, 1965). The decision makers, who are prone to usual human shortcomings, can never claim to have perfect analytical skills or ethical values. Gigantic multinationals which some of them have larger political and social impact than any country will be better off through inclusion of excluded parties in their resolutions. Initiating a relationship between management and other parties with legitimate claims on the corporation, dramatically affects firm's long-run performance. Through considering the interests of less heard; corporations can minimize the effects of popular policies preached by populist politicians.

Ethics in finance

It is general belief that ethics should be supreme, but due to our inclinations and interests we can hardly fulfill that. Kant puts: "human is the only being that can follow maxims"[3]. Indeed human is the only being who can follow maxims but that doesn't mean that he will always follow the good ones. Only artificial beings can do the good seamlessly, if designed to do so.

The ethical issues of financial activities will not be solved through focusing on the loopholes of regulations or social justice, the problem is the nature of financial decision making. Generally speaking, defending self interest is among our strongest instincts which cannot be fought in order to preach ethics. Since human being started to settle in villages and towns, many entities were trying to encourage individuals to conduct exchange of goods and trade in an ethical way. Religions, governments, laws, social contracts and all the influential factors of society tried to

1. Roy Barden, FCMA of the Hackett Group

2. John Burns, University of Dundee Gudrun Baldvinsdottir, Gothenburg University Hanne Norreklit, Aarhus University Robert W. Scapens, University of Groningen and Manchester Business School 2009 – Financial Management July/August 2009

3. Immanuel Kant. Groundwork of the Metaphysics of Morals, trans en ed. Allen W. Wood, New haven/London: Yale University Press (1785), 2002

tame this rational animal. Despite some improvements in valuing human dignity and respect for individual rights, we are still far from an ideal world.

Involving more stakeholders via a social media and analyze their views with an Artificial Intelligent Agent assists financial managers of large corporations in their decision making.

Unfortunately the majority of ethical discussions regarding artificial intelligence are focused on subjective aspects like machine consciousness, machine ethics, ethical states etc. Comparing AI capabilities with complex and contingent values of human beings is absurd because a purely artificial agent with no attachment to our identity or values doesn't have accurate, meaningful and ethical paradigms. Those discussions need to go one step further and discover AI's capabilities in certain areas. It is wise to move on to an analytical realm like the financial world, where all human beings have "A priori" preferences such as expansion, growth, prosperity and profitability.

Social networks

Social networking is deeply embedded in our daily life now. Nevertheless, normal citizens and especially social activists are utilizing it far more effective than managers and entrepreneurs. While investors leverage social media as a data or breaking news stream, unheard voices use social networks to coordinate actions, build networks, practice media activism, and manifest their emerging political ideals.

Corporations that have many unheard voices should be aware that social networks have created an environment that a post or blog which is published by an unsatisfied user at the right moment; can create a huge social movement in a very short time.

Social media could provide managers the opportunity to capture a real-time snapshot of what stakeholders believe to be important and what they don't. Asset managers and investors for instance, can add important factors to their existing plans and proposals through received inputs from social media.

In terms of involvement during the decision making process, social media can bridge the gap between managers and global stakeholders. The first step in utilizing social networks for financial reasons is developing a proposal which provides tangible benefits for all stakeholders. Promoting company's activities or window dressing is just beneficial for one side.

A social network of stakeholders administered by an Artificial Intelligent Agent

Unpopularity of financial managers (according to Edelman global trust survey of 2013[4]) indicates a limited consideration of stakeholders' interests. Usually financial leaders who like to follow their hunches and favor an entrepreneurial flair lack public support. There has to be a culture where ideas are allowed to emerge but the risks can be communicated and analyzed against contrary views. Well structured communication of all the affected parties could redefine the corporate strategies based on stakeholder's views and mobilize passive groups with diverse interests as autonomous agents. A social network of stakeholders can help to ensure that decisions are well communicated, risks are calculated and assessed against the right objective: the stakeholder's interests and corporation's long term profitability.

[4] Banks and financial institutions are still the least trusted sectors in the whole global economy.

Much of what has been discussed in defining values for machine ethics considers them as an offline system that should rigidly follow its programmed codes. Nevertheless, we are living in an online and flexible world, with the possibility to involve spontaneous notions of large groups of beneficiaries into decisions making procedures, analyze their arguments and consequently back up the decisions with more social support.

This paper suggests an inquiry of stakeholder's opinions that are connected to the board of directors via a social network. Every major decision will be communicated in the social media of authorized members and get a score through passing a certain process. Such concept provides grounds for combining ideas of managers with the wisdom of the crowd which is supervised an artificial agent. It has all four elements required for a wise crowd explained by James Surowiecki in his famous book called wisdom of crowds[5].

By applying such a system, each company will turn into a democratic institution, entailing several groups of independent and decentralized stakeholders which will automatically engage in the decision making process. This approach turns the reactive stakeholders into conscious and proactive decision makers.

Suggested values of the proposed Artificial Intelligent Agent

We all have subconscious biases based on our experience and situation which influences our decision making. Due to plurality of possibilities and global consequences in corporate business environment, it is only via an online-intelligent agent that the involvement of decentralized and independent stakeholders could be realized. Ethical values of a system which aims to prioritize different claims of stakeholders cannot be separated from them. However, due to the lack of empathetic understanding of experiences[6], human values are too complex to be adopted by an AI.

By assuming a certain school of thoughts guiding an AI in financial activities, a destructive rather than helpful system evolves. Utilitarianism for instance, implies that the system ought to turn into a mere profit-stimulating machine, while a deontological theory might imply that philanthropic duties imply to dedicate all the assets of the company to administer life-saving aid to the victims of a tornado that has occurred nearby. Rawlsian ethics are not extendable to an international scale (Wenar, 2006) and Aristotelian ethics beg for virtues which cannot be properly adoptable by an AI due to lacking of understanding human values. Therefore the system should only act like a consultant that receives and analyzes information. It has to be an expert, both in finance and statistics. Supervising a network of humans and weighting their interests against each other requires excellent analytical skills as well as solid speculating insights.

Proposed algorithm

Different groups of stakeholders represent opinions and interests of affected parties of the corporate activities. Depending on their collective goals, preferences and their interpretation of the situation, each group has the choice to agree or disagree with the proposed decisions of

[5] Four elements required to form a wise crowd include diversity of opinion, independence, decentralization and aggregation.

6. Since empathetic understanding of the experience of others is an important part of moral insight, an unconscious agent (no matter how smart) which cannot grasp it lacks an important fraction of morality. AI's are not subject to different experiences like fear, suffering, agony and happiness as well as hatred, retaliation or greed.

managers. Each decision which is proposed by financial managers (acquisition of a new firm or major investments for reducing CO2 emissions for instance) has to be shared in the network first. Background information together with a full overview of the current situation and foreseeable future consequences for stakeholders should be presented by managers. Authorized stakeholders who would like to participate in the process send an Agree or Disagree response motivated by their arguments. Then, AI invites stakeholders to a webinar and follows argumentations of each group regarding their stand point.

The system should be designed to utilize its calculating capabilities for analyzing claims and arguments of different stakeholders. Just like a rule-utilitarian algorithm, the AI must be able to derive maxims of each argument. The advantage of such capability is that it takes the discussions one level higher than the surface and depicts the core as well as the significance of issues for each stakeholder. The next step would be forwarding the maxims of all the stakeholders to the rest of participants and ask them to use weight factors for prioritizing the arguments based on their significance and send them back to the AI. Then the system considers proposed argumentations as well as received feedbacks from other stakeholders, and uses different statistical methods like clusters analysis or correlations. Based on proposed argumentations and received feedbacks, each group gets a weight factor and finally the sum of all opinions indicates the wisdom of the crowd regarding that decision. Described process is shown in shape 1.

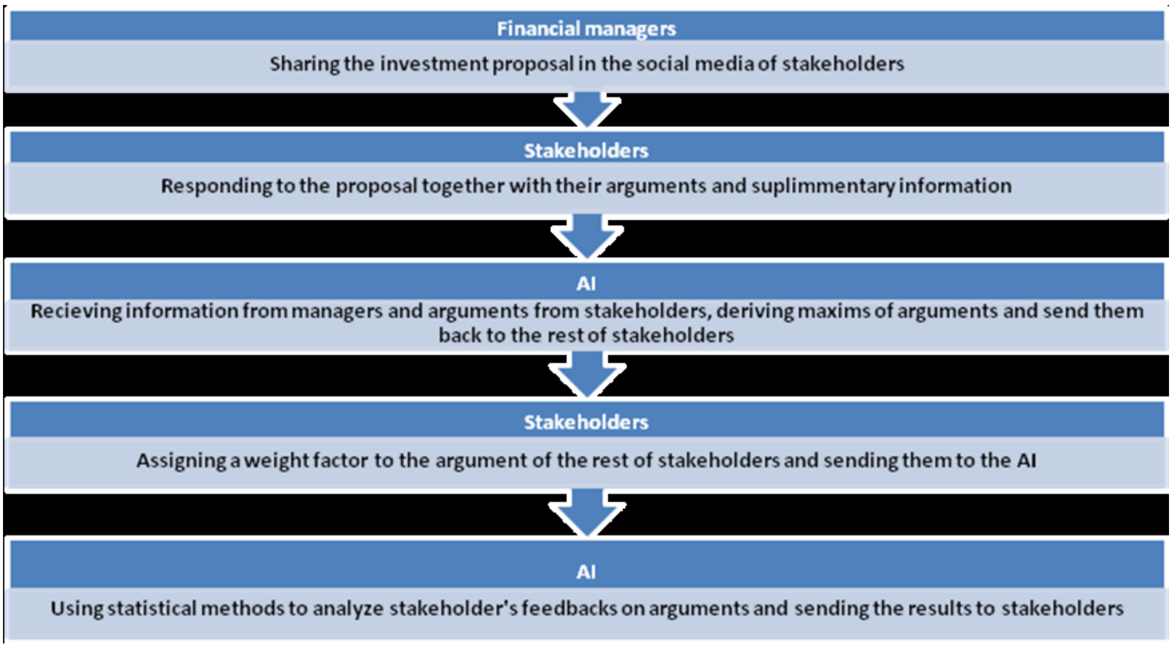

Figure 1. New decision making process

Table number 1 shows how stakeholder's argument can be weighted by AI.

Stakeholders	Weight	Increasing the budget for environmental projects	Weight	Acquiring a competitor
Employees	10	*Agree* *It provides a healthier job environment. *It protects the environment	15	*Disagree* *After the acquisition many organizational changes will occur
Customers	20	*Agree* *It protects environment	10	*Agree* *It limits customers' choice
Suppliers	5	*Disagree* *It mandates the suppliers to adapt their products to higher standards	10	*Disagree* *less bargaining power
Community	10	*Agree* *it protects environment *it highlights the significance of sustainable businesses	5	*Agree* *Company will pay more taxes
Trade unions	10	*Disagree* *it declines the dedicated amount for investments in the	10	*Disagree* *some workers will lose their jobs
Owners	20	*Agree* *otherwise some companies that have higher standards will not trade with the firm	10	*Agree* *it reduces marketing and staff expenses
Investors	25	*Agree* *share prices will increase	40	*Disagree* *It is a short term investment
AI's Final score	**85/100**	**Approved**	**25/100**	**Unapproved**

Business relevance

A continuous interaction of management with stakeholders instead of stockholders informs the public opinion about the complexity of issues and encourages investors to expect a steady-sustainable rather than rapid-shaky growth. Nonetheless, lack of a constructive relationship between stakeholders and financial managers has provided grounds for shareholders and investors to focus only on short term profitability. Paul Druckman puts: "The common thread is that today's model of capitalism overemphasizes short-term financial data and neglects information that gets at the true sources of sustainable value creation — things like innovation, brand equity, customer loyalty, and stakeholder relationships." Therefore, the main financial consideration of proposed AI should be based on positive net present value of investments.

One might correctly mention the short life cycle of technological products or constant market fluctuations as reasons to stay focused on short term measures. That is why simple statistics like Earning Per Share (EPS) have become extremely eminent in representing corporations' performance. Even though the state of competition has never been as intense as in today's saturated markets, the future of corporations which have sustainable profitability has never been so bright as well.

Conclusion:

Social networks have significantly impacted our world and have the potential to bring us altogether again. However, social media also has the potential to garner more unsatisfied parties; therefore piling up a large number of passive stakeholders is not going to benefit any corporation in the long run. It is a learning opportunity for affected parties to involve in the decision making processes of corporations and state their arguments and receive feedback.

From corporate point of view, a business model which delays the decision making process and involves Non-investors as well as their interests might be distracting. Nevertheless, a deeper analysis of the current trends and future possibilities reveals that involving more stakeholders guaranties a brighter future.

Incorporating social media into decision making procedures appears to be a difficult task. Financial structures are very complex & intertwined with regulations and require huge political momentum to change. The suggested proposal and offered algorithm are good examples which depict that decision making should not necessarily happen behind the closed doors. Social media allows involving more stakeholders in a short span of time and an artificial intelligent agent makes sure that all the arguments are fully understood and considered.

References:

Chamberlain, N. W., & Kuhn, J. W. (1965). *Collective bargaining* (Second ed.). NewYork: McGrawHill.

Chartered Institute of Management Accountants. (2009). *Improving decision making in organizations.* London: Chartered Institute of Management Accountants.

Drukman, P. (2013, April 17). Corporate reporting needs a reboot. *Harvard business review* .

Gilchrist, S., Sim, J., & Zakrajek, E. (2010). *Uncertainty, Financial Frictions, and Investment Dynamics.* Princeton: Princeton University.

Jansen, E. (2012). Corporate Governance & Social Responsibility: Challenges Regarding Accountability. *International Conference on Corporate Governance.* Skopje: University of Saint Cyril & Methodius.

Salter, M. S. (2003). Industrial Governance and the Strategic Management of Firms. *Journal of Strategic Management Education* , 5-54.

Surowiecki, J. (2005). *The Wisdom of Crowds.* New York: Anchor Books.

Trevin, L. K., & Brown, M. E. (2004). Managing to be ethical: Debunking five business ethics myths. *Academy of Management Journal , 18*, 69-73.

Wenar, L. (2006). *Why Rawls is Not a Cosmopolitan Egalitarian.* Blackwell.